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10/502,403	06/20/2005	Jose Manuel Francisco Ochoa	2099.0090000	3497

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STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.  
1100 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
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LOVE, TREVOR M

ART UNIT	PAPER NUMBER
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1611

MAIL DATE	DELIVERY MODE
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03/22/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/502,403	<b>Applicant(s)</b> OCHOA, JOSE MANUEL FRANCISCO	
	<b>Examiner</b> TREVOR M. LOVE	<b>Art Unit</b> 1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4,6,8 and 11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6,8 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/24/2009</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Acknowledgement is made to Applicant's response filed 08/24/2009.

Claims 1, 4, 6, 8, and 11 are pending and currently under consideration.

#### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 08/24/2009 was filed after the mailing date of the Non-Final Office Action on 04/24/2009. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### **Maintained Rejections**

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

**Claims 1, 4, 6, 8, and 11 are rejected under 103(a) as being unpatentable over Seymour (2001, Managed Care (Special Supplement)), in view of McCall (2001, Expert Opinion on Pharmacotherapy).**

Seymour teaches Glucovance is an oral medication that combines glyburide and metformin hydrochloride, which offer complementary mechanisms for achieving glycemic control in patients with Type 2 diabetes (page 11, first para.). Seymour sets forth clinical study trial results wherein diabetic patients were administered placebo, glyburide 2.5 mg alone, metformin 500 mg alone, glyburide 1.25 mg plus metformin 250 mg, glyburide 2.5 mg plus metformin 500 mg (page 13, col. 1, last full para.). Seymour teaches that combination therapy of glimepiride (Amaryl) tablets and metformin hydrochloride (Glucophage) tablets is known in the art. Specifically, Seymour teaches conversion guides showing how to switch diabetic patients on a combination of glimepiride (Amaryl) tablets and metformin hydrochloride (Glucophage) tablets to Glucovance (Table 1). In particular, Seymour teaches Glucovance tablets containing a combination of 5 mg glyburide and 500 mg metformin hydrochloride (Glucophage; page 14). Seymour teaches that patients on metformin and glyburide-metformin (5 mg/500 mg) were titrated to up to 4 tablets/day (= 20 mg of glyburide and 2000 mg of metformin hydrochloride, which would be equivalent to 8 mg glimepiride and 2000 mg of metformin hydrochloride based on the conversion factors of Seymour; page 15, last para., Table 2). Seymour teaches that in order to avoid hypoglycemia, the starting dose of Glucovance should not exceed the daily dose of glyburide (or equivalent dose of another sulfonylurea) and metformin already being taken and that the daily dose should

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be titrated in increments of no more than 5 mg/500 mg up to the minimum effective dose necessary to achieve adequate control of blood glucose (page 14, Table 1, including footnotes; and page 15, Table 2, including footnotes). Seymour teaches that the fixed dose combination of glyburide-metformin hydrochloride offers attendant gains in patient compliance in patients who are switched from polytherapy to fixed dose Glucovance monotherapy (page 16, last para).

Seymour fails to directly teach the instant claimed combinations comprising glimepiride and metformin hydrochloride, or the instant claimed weight ratio.

McCall state that glimepiride is a second generation sulfonylurea for treatment of Type 2 diabetes (abstract). McCall teaches that glimepiride's antihyperglycemic efficacy is equal to other secretagogues such as glyburide (abstract; page 703, col. 1, introduction section). McCall teach that glimepiride is approved for use as monotherapy and for combination therapy with metformin and with insulin (abstract). McCall teaches that the dose of glimepiride 1-8 mg daily as monotherapy (page 706, col. 2). McCall state that glimepiride has some reasonable comparative data suggesting benefit over glyburide (page 709, col. 2, 3rd para.; page 720, conclusion section). McCall states that choosing a drug such as glimepiride merits serious consideration because it offers convenience, dosing flexibility and relatively low expense while minimizing the common barrier to ideal control and the most common adverse effect of secretagogues, hypoglycemia (page 710, col. 2, last para. to page 711, col. 1, line 20). McCall state that glimepiride appears to have a lower risk of hypoglycemia than glyburide (page 703, col. 2, introduction section).

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It would have been obvious to a person of skill in the art at the time the invention was made to substitute the glyburide component in Glucovance as taught by Seymour with glimepiride as taught by McCall for its reduced hypoglycemic adverse effects in treating a patient with type 2 diabetes mellitus (page 709, col. 2, 3rd para.; page 710, col. 2, last para. to page 711, col. 1, line 20; page 720, conclusion section). One would have been motivated to do so because McCall suggest that glimepiride offers certain benefits over other secretagogues such as convenience, dosing flexibility and relatively low expense, while minimizing the common barrier to ideal control and the most common adverse effect of secretagogues, hypoglycemia (page 710, col. 2, last para. to page 711, col. 1, line 20) and glyburide as taught by Seymour et al. is also a secretagogue. Since McCall teach that glimepiride is approved for use as monotherapy in a dose of 1-8 mg daily, and also for combination therapy with metformin (abstract; page 706, col. 2), and Seymour suggest that patients on glimepiride and metformin hydrochloride wherein both drugs are administered as separate dosage forms may benefit from a fix dose tablet formulation comprising metformin hydrochloride and a secretagogue (i.e. glyburide; page 14), one would reasonably expect to successfully substitute the glyburide component in the fixed dose Glucovance tablet formulation comprising metformin hydrochloride 500 mg with a suitable therapeutic dose of glimepiride, for example, of 1 mg (= relative dose ratio of 1/500 of glimepiride and metformin hydrochloride) to arrive at applicant's claimed fixed weight ratio of glimepiride and metformin hydrochloride of "about 1/500" for use in the treatment of a patient with type 2 diabetes mellitus since Seymour suggest that secretagogue - metformin

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hydrochloride combinations oral tablets offer complementary mechanisms for achieving glycemic control in patients with Type 2 diabetes (page 11, first para.) and may provide gains in patient compliance (page 16, last para.), particularly patients who require polytherapy with two separate hypoglycemic agents (page 16, last para) and McCall state that glimepiride appears to have a lower risk of hypoglycemia than glyburide (page 703, col. 2, introduction section). Besides, it is routine in the medical arts to combine drugs that are known to have the same therapeutic utility and both metformin hydrochloride and glimepiride are known hypoglycemic drugs as evidenced by the teaching of Seymour and McCall. The motivation for combining the components flows from their individually known common utility (see *In re Kerkhoven*, 205 USPQ 1069 (CCPPA 1980)).

With respect to claim 1, Seymour teaches tablets comprising metformin hydrochloride in a fixed dose combination with a secretagogue (i.e. glyburide), wherein the weight ratio of the secretagogue (i.e. glyburide) to metformin hydrochloride is 5mg/500mg ( page 14) and suggest that patients requiring 2 mg of glimepiride and metformin hydrochloride 1000 mg – 2000 mg per day should receive an equivalent dose of glyburide/metformin hydrochloride of 2.5 mg/500mg (= 1 tablet of Glucovance) twice a day, which should be titrated in increments of 5mg/500mg of glyburide/metformin hydrochloride (= 1 tablet of Glucovance i.e. different strength from the 2.5/500 mg tablet; page 14, Table 1). Hence, one would reasonably expect to successfully modify the weight ratio of the secretagogue (e.g. glimepiride)-metformin hydrochloride components in the tablets of Seymour to arrive at the instant claimed weight ratio

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amounts depending on the dose amount of each agent required to achieve normoglycemic levels in a patient with type 2 diabetes absent objective evidence to the contrary.

Besides, McCall teaches glimepiride in a dose of 1- 8 mg and Seymour teaches regimens comprising glimepiride 2- 8 mg and metformin hydrochloride 1000-2000 mg per day (page 14, Table 1) and therefore one would expect to select any conventionally known dose amount of each component to formulate a fix dose combination tablet (e.g. 2 mg glimepiride and 1000 mg metformin hydrochloride = 1/500 weight ration; or 4 mg glimepiride and 2000 mg metformin hydrochloride = 1/500 weight ratio). Since the prior art encompasses a fixed dose combination comprising glimepiride to metformin hydrochloride in a weight ratio of 1/500 and the instant claims require a fixed dose combination of glimepiride to metformin hydrochloride in a weight ratio of about 1/500, one would reasonably expect that the fixed dose combination of the identical instantly claimed components in the same weight ratio would exhibit the same therapeutic properties, including being “a synergistic combination.”

Regarding the preamble of claim 1, Seymour teaches Glucovance tablets and tablets comprising active drugs (e.g. glimepiride and metformin hydrochloride) would reasonably be considered to be solid pharmaceutical compositions.

Regarding claim 4, Seymour teaches tablet formulations comprising metformin hydrochloride 500 mg (Glucophage) and glimepiride (Amaryl; see page 14, Table 1) and McCall teaches glimepiride in doses of 1 mg - 8 mg (page 706, col. 2). Further, tablet formulations are routinely formulated with inert components (e.g. binders) to



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facilitate the pharmaceutical formulation and therefore one would reasonably expect that the tablets encompassed by the prior art would also contain at least one excipient since excipients (e.g. binders) are routinely added to tablet formulations. Hence, it would have been within the scope of knowledge and skill of an artisan at the time the invention was made to add any suitable excipient to the formulation to render it pharmaceutically desirable absent objective evidence to the contrary.

Regarding claim 6, Seymour teaches metformin hydrochloride 1000 mg and glimepiride 2 mg (page 14, Table 1). The above discussion of the limitation "at least one excipient" in connection with claim 4 is incorporated by reference.

Regarding claim 8, the above discussion of claim 1 is incorporated by reference. Further, it would have been obvious to a person of skill in the art at the time the invention was made to administer the fixed dose combination of glimepiride and metformin hydrochloride having any suitable weight ratio, including applicant's claimed weight ratio amount to control blood glucose levels. One would have been motivated to do so because Seymour suggest that secretagogue - metformin hydrochloride combinations oral tablets offer complementary mechanisms for achieving glycemic control in patients with Type 2 diabetes (page 11, first para.) and may provide gains in patient compliance (page 16, last para.).

Regarding claim 11, Seymour teaches that the daily dose of a fixed dose combination comprising administering a secretagogue (e.g. glyburide) should be titrated in increments of no more than 5 mg/500 mg up to the minimum effective dose necessary to achieve adequate control of blood glucose (page 14, footnotes) such that

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one would reasonably expect to manipulate the relative dose amounts of glimepiride and metformin hydrochloride of the tablet composition encompassed by the prior art, including arriving at applicant's claimed dose amounts, and administer said fixed dose amounts (e.g. glimepiride 2 mg and metformin hydrochloride 1000 mg) to a patient with type 2 diabetes to achieve adequate control of blood glucose in a patient in said patient based on the conventionally known doses of each agent as taught by Seymour absent objective evidence to the contrary (pages 14-15, Tables 1-2).

Thus, it would have been obvious to a person of skill in the art at the time the invention was made to create the instant claimed invention with reasonable predictability.

#### *Response to Arguments*

Applicant argues in the Remarks filed 08/24/2009 that "Seymour and McCall do not teach a composition comprising both glimepiride and metformin hydrochloride in the same composition, let alone a composition comprising a synergistic combination of glimepiride and metformin hydrochloride at the specified weight ratios" (see Remarks, page 3). Applicant's argument is not found persuasive since McCall teaches that glimepiride can be utilized with metformin hydrochloride, and Seymour teaches that the use of a combination of glimepiride and metformin hydrochloride is known in the art. Applicant further argues on page 4 of the Remarks that "Seymour does not teach a composition comprising both glimepiride and metformin hydrochloride in the same composition". Applicant's argument is not found persuasive since as can be seen by Table 1 of Seymour, the combination therapy of glimepiride and metformin

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hydrochloride is known in the art. Applicant also argues that Seymour teaches away from the use of glimepiride and metformin hydrochloride. Applicant's argument is not found persuasive since "[t]he prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...."

In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004). Simply because Seymour teaches an alternative does not constitute a teaching away.

Applicant further argues that "[t]he Examiner has not provided the requisite rational for why the claimed subject matter would have been obvious over Seymour in view of McCall" (see Remarks, page 5). Applicant's argument is not found persuasive since the Examiner has set forth sufficient rational and motivation for one of ordinary skill in the art. Specifically, given the disclosure of the known combination of glimepiride and metformin hydrochloride, the ratios taught in Seymour, and the variably dosing that can be utilized for glimepiride as taught by McCall, one would have arrived at the instant invention with a reasonable expectation of success. Applicant further argues that "[o]bviousness of the claimed subject matter cannot be predicted on an unknown or allegedly inherent property of the art" (see Remarks, page 9). Applicant argues that the synergistic effects at the instant ratio of 1/500 should not be considered an inherent property in an obviousness rejection. Applicant's argument is not found persuasive since the rejection made is not based on inherency, rather, the rejection is based on a combination of references, wherein, upon said combination, one would arrive at a composition comprising glimepiride and metformin hydrochloride in a ratio of 1/500.

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Said composition would necessarily have said synergistic property. While the synergy may or may not be recognized in the art, MPEP 2112.01 states: "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)." Furthermore, the art is not required to teach the same reasoning for adding components as Applicant, MPEP 2144 (IV) states "the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by Applicant. See, e.g., *In re Kahn*, 411 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)." Finally, MPEP 2112 states: "[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977)."

Applicant's final argument is that "[e]ven if *prima facie* obviousness were established,

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evidence of unexpected results exists which would overcome such a rejection" (see Remarks, page 11). Applicant provides four evidentiary documents in support of the alleged unexpected results. Applicant's arguments and evidence have been fully considered and are not found persuasive. It is first noted that evidence of unexpected results does not necessarily overcome any and all rejections based on *prima facie* obviousness. Unexpected results, and evidence in support thereof, is considered in determining the appropriateness of a rejection based on *prima facie* obviousness. In the instant case, though Applicant has provided several references in support thereof, the rejection is still proper. Specifically, Applicant's evidence does not overcome the clear teachings in Seymour that ratios of 1/500 of glimepiride to metformin hydrochloride were present in the art (see Seymour, table 1). The fact that Seymour acknowledges that current daily dosages of glimepiride include 2, 4, and 8 mg and daily dosages of metformin hydrochloride include 1000, 1500, and 2000 mg provides clear evidence that said amounts were known in said ratios, and the combination of glimepiride and metformin hydrochloride is clearly set forth as a viable option in both Seymour and McCall. Therefore, Applicant's arguments and evidentiary references are not found persuasive.

### ***Conclusion***

No claims allowed. All claims rejected. No claims objected.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TREVOR M. LOVE whose telephone number is (571)270-5259. The examiner can normally be reached on Monday-Thursday 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Landau can be reached on 571-272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TL

/David J Blanchard/  
Primary Examiner, Art Unit 1643